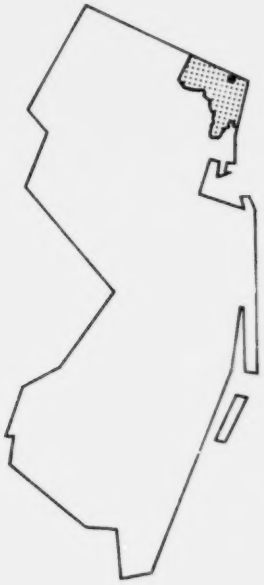
341-722
500
541-C-33
FEM 1209:340052
10746

FLOOD INSURANCE STUDY

BOROUGH OF MONTVALE, NEW JERSEY
BERGEN COUNTY

DCW
7518469
7/13/81



DECEMBER 15, 1980

federal emergency management agency
federal insurance administration

COMMUNITY NUMBER - 340052

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
	1.1 Purpose of Study	1
	1.2 Coordination	1
	1.3 Authority and Acknowledgments	2
2.0	AREA STUDIED	2
	2.1 Scope of Study	2
	2.2 Community Description	2
	2.3 Principal Flood Problems	7
	2.4 Flood Protection Measures	10
3.0	ENGINEERING METHODS	10
	3.1 Hydrologic Analyses	10
	3.2 Hydraulic Analyses	11
4.0	FLOOD PLAIN MANAGEMENT APPLICATIONS	16
	4.1 Flood Boundaries	16
	4.2 Floodways	16
5.0	INSURANCE APPLICATION	23
	5.1 Reach Determinations	23
	5.2 Flood Hazard Factors	24
	5.3 Flood Insurance Zones	24
	5.4 Flood Insurance Rate Map Description	27
6.0	OTHER STUDIES	27
7.0	LOCATION OF DATA	28
8.0	BIBLIOGRAPHY AND REFERENCES	28

TABLE OF CONTENTS (Cont'd)

Page

FIGURES

Figure 1 - Vicinity Map 3
Figure 2 - Estimated Flood Elevations 8
Figure 3 - Estimated Flood Elevations..... 8
Figure 4 - Estimated Flood Elevations..... 9
Figure 5 - Estimated Flood Elevations..... 9
Figure 6 - Floodway Schematic..... 23

TABLES

Table 1 - Summary of Discharges 12
Table 2 - Floodway Data 18
Table 3 - Flood Insurance Zone Data 25

EXHIBITS

Exhibit 1 - Flood Profiles

Bear Brook	Panels 01P-03P
Cherry Brook	Panel 04P
Echo Glen Brook	Panels 05P-06P
Fieldstone Brook	Panels 07P-08P
Laurel Brook	Panels 09P-10P
Mill Brook	Panels 11P-12P
Muddy Creek	Panels 13P-15P
Pascack Brook	Panel 16P
Stateline Brook	Panel 17P

Exhibit 2 - Flood Boundary and Floodway Map Index
Flood Boundary and Floodway Map

PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index
Flood Insurance Rate Map

FLOOD INSURANCE STUDY

1.0 INTRODUCTION

1.1 Purpose of Study

The purpose of this Flood Insurance Study is to investigate the existence and severity of flood hazards in the Borough of Montvale, Bergen County, New Jersey, and to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Initial use of this information will be to convert Montvale to the regular program of flood insurance by the Federal Insurance Administration. Further use of the information will be made by local and regional planners in their efforts to promote sound land use and flood plain development.

1.2 Coordination

An initial meeting was held on March 18, 1976, and was attended by representatives of the Federal Insurance Administration, the study contractor, and local officials. At this meeting, those streams to be studied by detailed methods and those to be studied by approximate methods were identified.

A review meeting was held on March 3, 1977, in order to gather information on past floods, determine the availability of hydrologic and hydraulic data for the detailed study streams, and gather existing mapping. The meeting was attended by representatives of the Federal Insurance Administation, the study contractor, and the community.

During the course of the study, information was provided by community officials, the Bergen County Planning Department, and the U.S. Army Corps of Engineers.

The Federal Insurance Administration Consultation Coordination Officer arranged two meetings for the Borough of Montvale. At an intermediate meeting, held on October 20, 1977, representatives of the Federal Insurance Administration, the study contractor, and the community reviewed the floodways with the Borough Engineers.

On November 16, 1978, the results were reviewed at a final community coordination meeting attended by representatives of the Federal Insurance Administration, the study contractor, and the community. No significant changes resulted from this meeting.

1.3 Authority and Acknowledgments

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968, as amended.

The hydrologic and hydraulic analyses for this study were performed by the New Jersey Department of Environmental Protection, for the Federal Insurance Administration, under Contract No. H-3959. This work, which was completed in October 1977, covered all significant flooding sources affecting the Borough of Montvale.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated areas of the Borough of Montvale, Bergen County, New Jersey. The area of study is shown on the Vicinity Map (Figure 1).

Flooding from the following streams was studied by detailed methods: Bear Brook, from the southern corporate limits to the Garden State Parkway right-of-way; Cherry Brook, within the corporate limits; Echo Glen Brook, from the southern corporate limits to 450 feet upstream of Akers Avenue; Fieldstone Brook, from its confluence with Pascack Brook to Woodland Road; Laurel Brook, from its confluence with Mill Brook for 3025 feet upstream; Mill Brook, from the southern corporate limits to Summit Avenue; Muddy Creek, within the corporate limits; Pascack Brook, within the corporate limits; and Stateline Brook, from its confluence with Pascack Brook to the northern corporate limits.

Those areas studied by detailed methods were chosen with consideration given to all proposed construction and forecasted development through 1982.

2.2 Community Description

Montvale is in northeastern Bergen County, in northeastern New Jersey. It is approximately 10 miles north of the City of Hackensack, in the Pascack Brook Valley. It encompasses approximately 2.9 square miles and is bordered by the Towns of Ramapo, New York and Orangetown, New York, on the north; the Township of River Vale on the east; the Boroughs of Park Ridge and Woodcliff Lake on the south; and the Borough of Upper Saddle River on the west.

The population of Montvale increased from 1856 in 1950 to 3699 in 1960 (Reference 1) and to 7327 in 1970 (Reference 2).

The zoning in Montvale is 72 percent single-family residential, 24 percent light industrial and 4 percent commercial and medium-density residential.

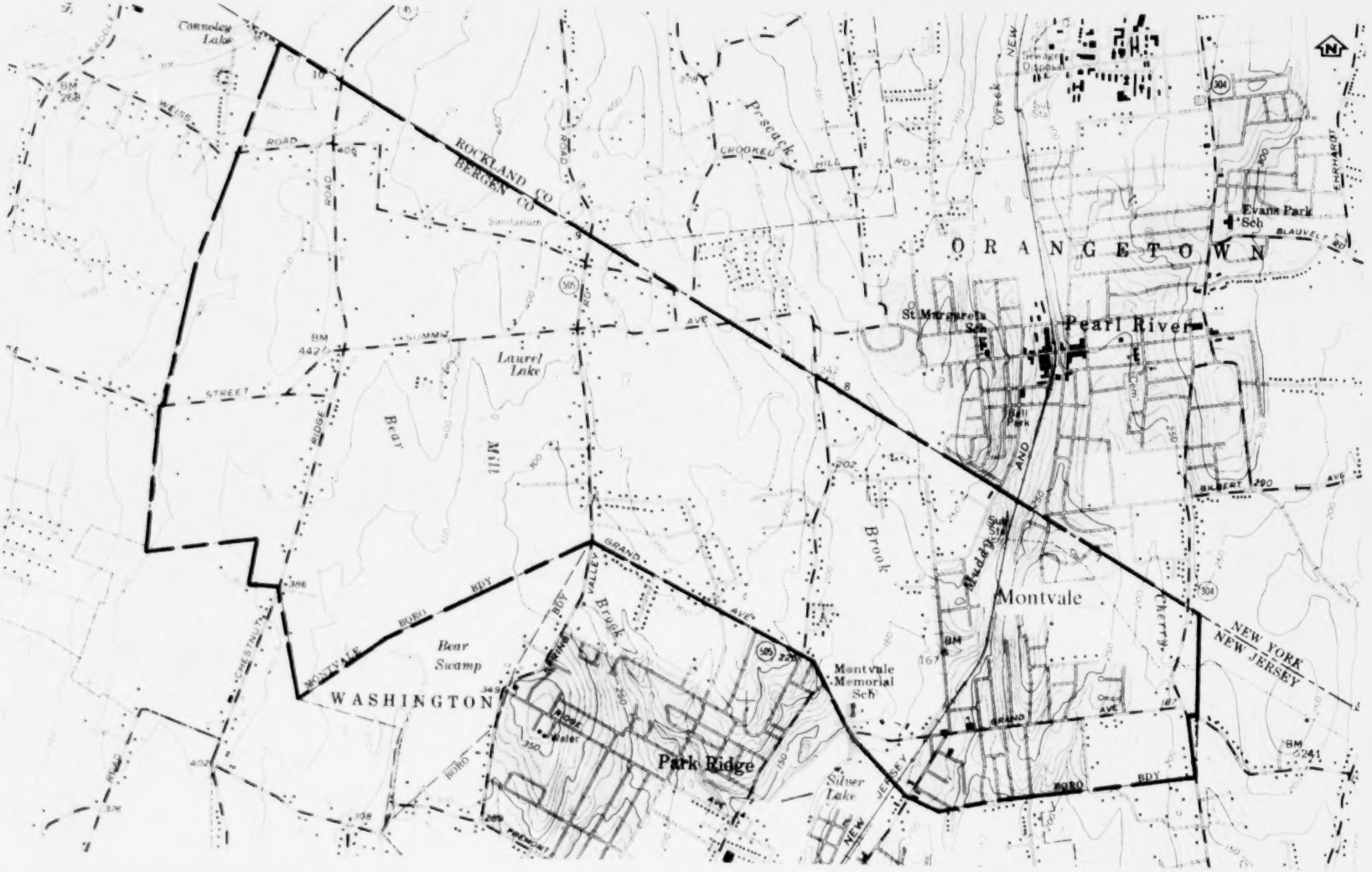


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

APPROXIMATE SCALE
2000 0 2000 4000 6000 FEET

VICINITY MAP

The flood plain of Bear Brook consists essentially of undeveloped natural areas, with the exception of some light scattered industry along the outer fringes. This area is expected to continue to attract additional light industrial development. Therefore, sound storm-water runoff management is essential.

Cherry Brook has considerable single-family residential development in the flood plain in the reach from the southern corporate limits to approximately 1000 feet upstream of Rivervale Road. Upstream of this location, the flood plain consists of undeveloped natural areas.

Echo Glen Brook is piped under the high school parking lot; upstream there is some single-family residential development near the fringes of the flood plain.

For approximately 750 feet of the initial 900 feet of Fieldstone Brook, the stream is piped. A flood plain in the usual sense, therefore, does not exist. The piped stream is flanked on the south by several single-family homes, however, flooding would be expected to occur only on the northern side of the piped stream. Upstream of Woodland Road, there is no development.

Laurel Brook has no development in the flood plain.

The Mill Brook flood plain contains some industrial development near the fringes in the initial 500-foot reach and also in the reach just south of Summit Avenue. The intervening reach is an undeveloped natural area.

Muddy Creek has primarily single-family residential development along the outer fringe of its flood plain, except for a large commercial shopping plaza (Montvale Plaza) which is in the western flood plain near the New York State line.

The flood plain along Pascack Brook in Montvale has various types of land use. The reach downstream of the Muddy Creek confluence has varied public uses near the outer fringes of the western part of the flood plain. The fringe of the eastern part of the flood plain contains the only multifamily development in the borough. Upstream of Muddy Creek, the flood plain is an undeveloped natural area with isolated single-family development near the fringes.

There is no development along the Stateline Brook flood plain. The stream slope is relatively flat at the confluence with Pascack Brook and steepens as it approaches the upper corporate limits.

Bear Brook has its source in northwestern Montvale. It flows due south, enters Park Ridge for a short distance, and continues flowing southerly along the border between the Boroughs of Park Ridge and Woodcliff Lake. Bear Brook flows easterly along the border between these two communities and discharges into the northern end of Woodcliff Lake Reservoir. Upstream of Woodcliff Lake Reservoir, the stream splits, and the main stem continues in the Garden State Parkway right-of-way.

Cherry Brook has its origin in southwestern Clarkstown, in the Hamlet of Pearl River, Rockland County, New York. It flows southerly, crossing into New Jersey at the Montvale corporate limits, through Montvale and River Vale, where it joins Hackensack River just below Lake Tappan Reservoir.

Echo Glen Brook originates in south-central Montvale. It flows southerly, crosses into northwestern Park Ridge, and continues generally southerly to join Mill Brook in Park Ridge.

Fieldstone Brook begins in central Montvale and flows southeasterly before joining Pascack Brook.

Laurel Brook is a tributary to Mill Brook. It begins in west-central Montvale and flows generally southerly to join Mill Brook just north of the corporate limits of Park Ridge.

Mill Brook originates in west-central Montvale. It flows southerly and enters the northwestern corner of Park Ridge. In Park Ridge, it flows generally southwesterly, is joined by Echo Glen Brook, and discharges into Pascack Brook just downstream of Electric Lake.

Muddy Creek, a tributary of Pascack Brook, originates in southwestern Clarkstown, Rockland County, New York. It flows generally southerly through Orangetown and enters New Jersey in northeastern Montvale. It flows a short distance in Montvale before joining Pascack Brook.

Pascack Brook has its origins in east-central Ramapo, Rockland County, New York. It flows generally southerly, crossing into Bergen County in Montvale, through Park Ridge into Woodcliff Lake Reservoir and through Rivervale, Hillsdale, Westwood, Emerson, and Harrington Park. In Harrington Park, Pascack Brook joins Hackensack River, and the two streams form the upper portion of the Oradell Reservoir.

Stateline Brook originates in north-central Montvale adjacent to the New York State line. It flows southeasterly, crossing out of and back into Montvale several times, and eventually discharges into Pascack Brook within the Montvale corporate limits.

The Bear Brook stream slope is moderately steep and the flood plain slopes vary from flat to moderate.

The stream slope of Cherry Brook is moderately steep for the initial 1000 feet and becomes flat for the remainder of its length in the borough. The slopes of the flood plain are also moderately steep throughout the lower reach and become flatter in the upper reach.

The entire stream slope of Echo Glen Brook is very steep, as are the flood plain slopes.

The piped portion of Fieldstone Brook is relatively flat, as is the adjacent flood plain; however, upstream of Woodland Road, the stream and flood plain steepen considerably.

The stream slope and flood plain on Laurel Brook are moderately steep.

The entire length of Mill Brook is moderately steep, and the flood plain slopes are generally flat.

The stream slope on Muddy Creek is relatively steep, and the flood plain has a moderate slope.

The stream slope on Pascack Brook is relatively steep, and the slope of the flood plain is flat in the lower reach and becomes steeper in the upper reach.

On Stateline Brook, the flood plain slopes follow those of the stream bottom and vary from flat in the downstream areas to steep farther upstream.

Montvale is in the Hackensack River basin, which is composed of low rolling hills. Marsh and flat lowlands border the streams at numerous locations. The Hackensack River watershed is in the Piedmont Plain, which is a division of the Appalachian Plateaus Province. The basin is underlain by Triassic (Newark Group) sedimentary strata composed of sandstone and shale which dip to the northwest. The watershed has been overrun by several glacial ice advances. The final Wisconsin age glacial event deposited considerable amounts of glacial till, consisting of sand, gravel, and clay (Reference 3).

The climate of the region is mostly continental with moderate winters and summers. There are frequent weather changes, particularly during the spring and fall. The temperatures range from an average monthly low of 21°F in the winter to an average monthly high of 80°F in the summer. The average annual precipitation is 44 inches, and it is fairly uniformly distributed throughout the year. There is an average annual snowfall of 31 inches (Reference 3).

2.3 Principal Flood Problems

The most severe flooding in this region has been produced by tropical hurricanes of West Indian origin (Reference 3).

Floods have been a recurring problem in the Hackensack River basin. Some of the most significant floods took place in the following years: October 1903; March 1936; July 1945; March 1951; August and October 1955; September 1960; September 1966; May 1968; February 1969; August and September 1971; June 1972; December 1973; September 1975; June 1976; and February, March, and November 1977. From this listing, it is evident that, since the 1960s, significant flooding has become a more frequent occurrence. This may be attributed to increased urbanization, which produces larger runoff and results in greater flood damages.

The maximum flood occurred on September 12, 1971. This event had an estimated recurrence interval of 30 years, as recorded at the Westwood gage on Pascack Brook in the Borough of Westwood. The second largest flood recorded at the Westwood gage on Pascack Brook occurred on August 28, 1971, and had an estimated recurrence interval of 20 years.

During the storm of November 7 and 8, 1977, 9.3 inches of rainfall was recorded in the northern New Jersey area. According to the Newark Star Ledger (November 11, 1977), estimated damages exceeded $60 million in Bergen County. This storm caused damage to Grand Avenue Bridge over Pascack Brook, but the bridge has again been opened to traffic.

Grand Avenue Bridge is a hydraulic restriction to floodflow and has been overtopped on several occasions. The Bergen County Department of Public Works completed the design for a new structure, which was to have been constructed in 1977. However, due to unexpected right-of-way acquisition delays, the construction was scheduled for 1979. The hydraulic modeling of Pascack Brook takes into consideration the proposed bridge.

The primary flooding problems in the borough are along Pascack Brook in the area immediately upstream of Grand Avenue, where floodwaters have inundated large portions of the flood plain between Grand Avenue and Bayberry Drive.

No records of past floods were found for Bear Brook, Cherry Brook, Echo Glen Brook, Fieldstone Brook, Laurel Brook, Mill Brook, Muddy Creek, or Stateline Brook.

In Figures 2 through 5, the arrows indicate heights of the expected water surfaces associated with the 100- and 500-year floods at selected locations along the streams in Montvale.

Figure 2. Expected Flood Heights of the 100-Year and 500-Year Flows for Pascack Brook at the Upstream Face of Grand Avenue Bridge

Figure 3. Expected Flood Heights of the 100-Year and 500-Year Flows for Pascack Brook at the Upstream Face of Magnolia Avenue Bridge

Figure 4. Expected Flood Heights of the 100-Year and 500-Year Flows for Cherry Brook at the Downstream Face of the Middletown Road Culvert

Figure 5. Expected Flood Heights of the 100-Year and 500-Year Flows for Fieldstone Brook at Centerline of Woodland Road

2.4 Flood Protection Measures

The borough of Montvale has no formal structural measures designed specifically for flood protection. It has a program to maintain stream channel and culvert capacities through debris and silt-deposit removal.

The U.S. Army Corps of Engineers is preparing a flood-control study of Pascack Brook and Muddy Creek (Reference 4), which is likely to propose some flood protection measures.

In an effort to minimize flood damage, the Division of Water Resources of the New Jersey Department of Environmental Protection, under authority of NJSA 58:16A-50 and others, has adopted rules, regulations, and minimum standards concerning development and use of land within the floodway.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual occurrence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each stream studied in detail in the community.

For the streams studied by detailed methods, three methods of determining the peak discharge-frequency relationships were used.

Table 1. Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Bear Brook					
At Garden State Parkway	0.21	77	128	163	268
Cherry Brook					
At Orangeburg Road	1.58	182	305	375	575
At Bergen-Rockland County Limits	0.86	126	216	266	415
Echo Glen Brook					
At Confluence With Mill Brook	0.22	102	165	212	338
At Grand Avenue	0.08	60	99	125	200
Fieldstone Brook					
At Confluence With Pascack Brook	0.23	87	154	193	315
Laurel Brook					
At Confluence With Mill Brook	0.34	119	209	261	422
Mill Brook					
At Spring Valley Road	0.82	208	358	460	750
At Summit Avenue	0.17	74	122	157	253
Muddy Creek					
At Confluence With Pascack Brook	1.89	257	426	521	793
At Corporate Limits	1.68	227	377	463	705
Pascack Brook					
At Park Avenue	15.78	1583	2457	2942	4292
At Grand Avenue	13.85	1500	2332	2796	4088
At Corporate Limits	10.68	1235	1931	2321	3407

Table 1. Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Stateline Brook At Confluence With Pascack Brook	0.18	77	137	172	281

The water-surface elevations of the selected recurrence interval for all detailed study streams were determined by using the U.S. Army Corps of Engineers HEC-2 step-backwater computer program (Reference 10).

For the entire study reaches of Bear, Cherry, Echo Glen, Fieldstone, Laurel, Mill and Stateline Brooks, the cross section data were obtained from photogrammetric surveys (Reference 11), except for the underwater portions of the cross sections, which were field surveyed. Field surveys were also used to obtain the elevation data and structural geometry of all bridges and culverts.

The cross sectional data for Muddy Creek and Pascack Brook were determined by using a HEC-2 model obtained from the U.S. Army Corps of Engineers. The model was developed as part of a previous flood control study (Reference 4). The model was reviewed and field verified, the stationing adjusted to the topographic mapping (Reference 11), and other minor adjustments made.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway is computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Roughness coefficients (Manning's "n") for the streams studied in detail were estimated by field inspection at various cross section locations along each stream. The roughness coefficients varied as shown in the tabulation below:

Stream	Main Channel	Overbanks
Bear Brook	0.030	0.070
Cherry Brook	0.040	0.080
Echo Glen Brook	0.030	0.080
Fieldstone Brook	0.045	0.070
Laurel Brook	0.040	0.090
Mill Brook	0.030 - 0.040	0.050 - 0.070
Muddy Creek	0.030 - 0.040	0.070 - 0.090
Pascack Brook	0.035 - 0.048	0.120 - 0.150
Stateline Brook	0.045	0.080

Starting water-surface elevations for Bear, Cherry, Echo Glen, Fieldstone, Mill, and Stateline Brooks, and Muddy Creek were determined by using the slope-area method. Starting water-surface elevations for Laurel Brook were taken from the Mill Brook confluence, where peak flows are coincident. On Pascack Brook, starting water-surface elevations were determined from the Oradell Reservoir spillway crest elevation, located in Harrington Park, New Jersey.

Flooding along some streams also results from backwater effects from their receiving streams. Therefore, it was necessary to determine whether the governing influence for inundation would result from riverine or backwater flow. To find this interface for floods of each recurrence interval, riverine and backwater flood heights were compared graphically, and only the higher elevations are presented on the profiles.

The water-surface profiles of some of the streams, or portions thereof, are the result of backwater conditions produced by the receiving stream or body of water. In Montvale, it was found that the water-surface stages of Pascack Brook produce backwater conditions that extend up Fieldstone Brook for approximately 135 feet, to the downstream end of the pipe culvert, and on Muddy Creek for approximately 220 feet. Pascack Brook controls elevations on Stateline Brook for approximately 400 feet upstream of the confluence.

Due to the extreme meandering nature of streams in the study area, stream distances will not always agree between maps and profiles.

Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals (Exhibit 1).

The water-surface profiles developed for this Flood Insurance Study are based upon the premise that all hydraulic structures remain unobstructed and clear of debris. However, the possibility exists that obstructions may occur at structures, especially during times of severe flooding; therefore, water-surface elevations in excess of those shown on the profiles may be experienced.

At some locations along study streams, hydraulic conditions may create a condition of supercritical flow. Because of the inherent instability of such a condition, an assumption of critical flow has been adopted for the backwater analyses of this study.

A new bridge for Grand Avenue over Pascack Brook has been designed, and was scheduled for construction in 1979. This structure and the associated stream channel changes have been incorporated in the hydraulic model for this study.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in the study are shown on the maps.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

A prime purpose of the National Flood Insurance Program is to encourage State and local governments to adopt sound flood plain management programs. Each Flood Insurance Study, therefore, includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the Federal Insurance Administration as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100- and 500-year floods have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:2400 with a contour interval of 5 feet (Reference 11).

In cases where the 100- and 500-year flood boundaries are close together, only the 100-year boundary has been shown.

Field reconnaissance provided data which were used in verifying the limits of flooding delineated in this study.

Flood boundaries for the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map (Exhibit 2).

Small areas within the flood boundaries may lie above the flood elevations and, therefore, not be subject to flooding; owing to limitations of the map scale and/or lack of detailed topographic data, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity and increases flood heights, thus increasing flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent flood plain areas, that must be kept free of encroachment in order that the 100-year flood be carried without substantial increases in flood heights. As minimum standards, the Federal Insurance Administration limits such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. Lower increases are

permitted if specified by state law or legally adopted regulations. The State of New Jersey has established criteria limiting the increase in flood heights to 0.2 foot. Thus, floodways having no more than a 0.2-foot surcharge have been delineated in this study.

The floodways in this study are based on riverine flows and were determined by using Methods 1 and 4 of the Encroachment Option of the U.S. Army Corps of Engineers HEC-2 computer program (Reference 10). Floodways for tributary streams were based on the 100-year flood discharges and elevations of those streams only, and did not include consideration of any backwater flooding from the main stream. The floodways were computed on the basis of equal-conveyance reduction of the overbanks that produced no more than a 0.2-foot water-surface rise at a given cross section (Method 4). To ensure hydraulic continuity within the study reaches, these limits were tested by using Method 1, which is a continuous general encroachment along the watercourse. At each cross section, if maximums were exceeded, the encroachments were adjusted so that the water surface did not rise above the 0.2-foot limit at any location in the study reach. Because of the effect of downstream encroachments on upsteam water-surface elevations, there may be cross sections where only minimal encroachment is permitted. This effect imposes an additional constraint on flood plain encroachments and results in a water-surface increase of less than 0.2 foot. Encroachments were made at natural valley sections and not onto roadways at bridges.

The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 2).

As shown on the Flood Boundary and Floodway Map (Exhibit 2), the floodway boundaries were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the floodway and 100-year flood boundaries are close together, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 0.2 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 6.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Bear Brook								
A	11,800	33	55	6.2	315.7	315.7	315.7	0.0
B	12,100	33	52	6.5	317.7	317.7	317.7	0.0
C	12,760	44	47	7.2	329.2	329.2	329.2	0.0
D	14,060	31	48	7.0	349.3	349.3	349.3	0.0
E	15,400	40	49	6.8	380.4	380.4	380.4	0.0
F	16,000	30	83	4.0	392.0	392.0	392.0	0.0
G	16,870	26	41	8.2	402.0	402.0	402.0	0.0
Cherry Brook								
A	11,750	42	43	7.4	172.2	172.2	172.2	0.0
B	12,680	24	41	7.8	189.8	189.8	189.8	0.0
C	13,280	50	114	2.8	193.3	193.3	193.4	0.1
D	14,700	60	180	1.8	196.9	196.9	197.0	0.1
Echo Glen Brook								
A	3,390	26	51	1.7	287.6	287.6	287.6	0.0
B	3,443	40	71	1.2	288.2	288.2	288.2	0.0
C	3.623	5	6	8.0	293.2	293.2	293.2	0.0
D	3,800	5	7	7.1	300.3	300.3	300.3	0.0
E	4,150	15	11	4.2	318.9	318.9	318.9	0.0

[1]Feet Above Mouth

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOODWAY DATA

BEAR BROOK-CHERRY BROOK-ECHO GLEN BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Fieldstone Brook								
A	900	37	37	5.3	164.4	164.4	164.4	0.0
B	1,555	40	35	5.5	214.1	214.1	214.1	0.0
Laurel Brook								
A	220	88	71	3.2	280.2	280.2	280.2	0.0
B	550	147	86	2.6	288.4	288.4	288.5	0.1
C	870	123	116	1.9	295.3	295.3	295.5	0.2
D	1,170	123	87	2.6	302.1	302.1	302.2	0.1
E	1,830	60	68	3.3	313.9	313.9	314.1	0.2
F	2,690	27	34	6.6	328.9	328.9	328.9	0.0
G	3,025	30	40	5.6	340.7	340.7	340.7	0.0
Mill Brook								
A	7,000	40	87	5.3	271.8	271.8	271.8	0.0
B	7,474	10	62	7.4	278.1	278.1	278.1	0.0
C	7,830	319	418	1.1	279.2	279.2	279.2	0.0
D	8,230	67	66	3.1	282.2	282.2	282.2	0.0
E	8,525	79	73	2.8	286.7	286.7	286.9	0.2
F	9,108	32	35	5.9	305.1	305.1	305.1	0.0
G	10,250	50	46	4.4	328.7	328.7	328.7	0.0
H	10,500	23	50	4.1	337.8	337.8	337.8	0.0
I	11,320	26	26	8.0	352.5	352.5	352.5	0.0
J	11,840	22	47	4.4	359.1	359.1	359.1	0.0

[1]Feet Above Mouth

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOODWAY DATA

FIELDSTONE BROOK-LAUREL BROOK-MILL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Muddy Creek								
A	300	15	52	9.4	150.4	150.4	150.4	0.0
B	455	15	58	8.5	152.7	152.7	152.7	0.0
C	725	29	112	4.4	157.8	157.8	157.8	0.0
D	1,220	90	111	4.4	167.1	167.1	167.1	0.0
E	1,690	40	92	5.3	171.4	171.4	171.6	0.2
F	1,932	36	63	7.8	176.8	176.8	176.8	0.0
G	2,028	105	247	2.0	183.4	183.4	183.4	0.0
H	2,880	80	151	3.3	187.5	187.5	187.7	0.2
I	3,460	20	59	8.4	201.9	201.9	201.9	0.0
J	3,860	20	63	7.8	208.8	208.8	208.8	0.0
K	4,280	31	96	5.1	212.4	212.4	212.5	0.1

[1]Feet Above Mouth

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOODWAY DATA

MUDDY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Pascack Brook								
A	44,096	101	401	7.2	142.3	142.3	142.5	0.2
B	44,980	80	335	7.6	145.7	145.7	145.8	0.1
C	45,430	113	475	5.4	148.9	148.9	148.9	0.0
D	45,620	70	299	8.6	149.2	149.2	149.3	0.1
E	45,930	180	590	4.3	152.3	152.3	152.3	0.0
F	46,790	85	450	5.7	157.9	157.9	158.1	0.2
G	47,190	303	696	3.7	161.3	161.3	161.5	0.2
H	47,540	170	434	5.9	165.3	165.3	165.3	0.0
I	47,940	70	311	8.2	170.1	170.1	170.1	0.0
J	48,730	70	505	5.1	182.3	182.3	182.3	0.0
K	49,160	60	341	7.5	185.4	185.4	185.4	0.0
L	49,570	62	351	7.3	188.8	188.8	188.8	0.0
M	50,111	100	276	9.3	192.9	192.9	192.9	0.0
N	50,330	281	914	2.8	196.6	196.6	196.6	0.0
O	50,730	80	314	8.2	198.0	198.0	198.2	0.2
P	51,140	100	435	5.9	202.5	202.5	202.5	0.0

[1]Feet Above Mouth

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOODWAY DATA

PASCACK BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Stateline Brook								
A	330	31	39	4.4	199.8	198.8[2]	198.8[2]	0.0
B	540	50	44	3.9	203.5	203.5	203.5	0.0
C	680	40	45	3.8	206.0	206.0	206.1	0.1

[1]Feet Above Mouth from Pascack Brook [2]Elevations Computed Without Consideration of Controlling Effect

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOODWAY DATA

STATELINE BROOK

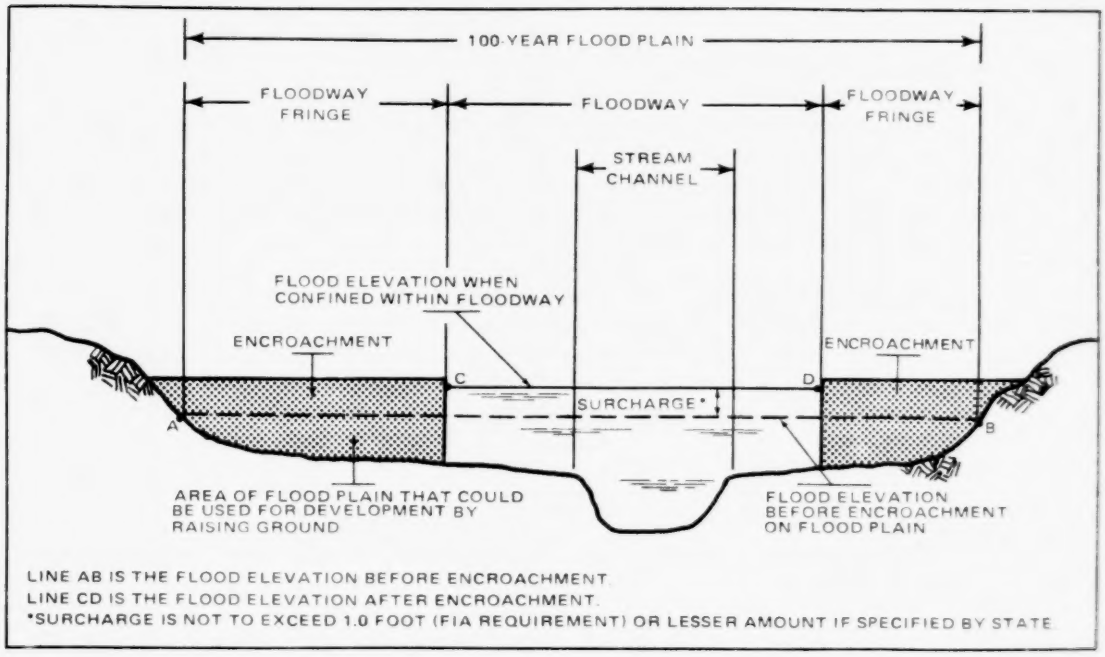

100-YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE AB IS THE FLOOD ELEVATION BEFORE ENCROACHMENT.
LINE CD IS THE FLOOD ELEVATION AFTER ENCROACHMENT.
*SURCHARGE IS NOT TO EXCEED 1.0 FOOT (FIA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

Figure 6. Floodway Schematic

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, the Federal Insurance Administration has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors, and flood insurance zone designations for each flooding source studied in detail affecting Montvale.

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach:

Average Difference Between 10- and 100-year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

The locations of the reaches determined for the flooding sources of Montvale are shown on the Flood Profiles (Exhibit 1) and summarized in Table 3.

5.2 Flood Hazard Factors

The Flood Hazard Factor (FHF) is the Federal Insurance Administration device used to correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHF are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year water-surface elevations is greater than 10.0 feet, accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective Flood Hazard Factors, the entire incorporated area of the Borough of Montvale was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

Zones A1, A2, A3, A4:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to Flood Hazard Factors.
Zone B:	Areas between the Special Flood Hazard Areas and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; also areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding.

The flood elevation differences, Flood Hazard Factors, flood insurance zones, and base flood elevations for each flooding source studied in detail in the community are summarized in Table 3.

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION (FEET NGVD)[3]
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
Bear Brook							
Reach 1	0002	-1.0	-0.3	0.8	010	A2	Varies - See Map
Cherry Brook							
Reach 1	0001	-1.0	-0.3	0.7	010	A2	Varies - See Map
Echo Glen Brook							
Reach 1	0002	-0.9	-0.4	1.1	010	A2	Varies - See Map
Fieldstone Brook							
Reach 1	0001	-0.6	-0.2	0.4	005	A1	Varies - See Map
Laurel Brook							
Reach 1	0002	-0.6	-0.2	0.3	005	A1	Varies - See Map
Mill Brook							
Reach 1	0002	-1.5	-0.6	1.0	015	A3	Varies - See Map
Reach 2	0002	-0.4	-0.1	0.2	005	A1	Varies - See Map
Reach 3	0002	-0.9	-0.4	0.9	010	A2	Varies - See Map
Muddy Creek							
Reach 1	0001	-1.0	-0.3	0.8	010	A2	Varies - See Map
Reach 2	0001	-1.4	-0.4	0.9	015	A3	Varies - See Map

[1]Flood Insurance Rate Map Panel [2]Weighted Average [3]Rounded to Nearest Foot

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD INSURANCE ZONE DATA

BEAR BROOK - CHERRY BROOK - ECHO GLEN BROOK - FIELDSTONE BROOK - LAUREL BROOK - MILL BROOK - MUDDY CREEK

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION (FEET NGVD)[3]
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
Pascack Brook Reach 1	0001	-2.0	-0.6	1.4	020	A4	Varies - See Map
Stateline Brook Reach 1	0001	-0.6	-0.2	0.4	005	A1	Varies - See Map

[1]Flood Insurance Rate Map Panel [2]Weighted Average [3]Rounded to Nearest Foot

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD INSURANCE ZONE DATA

PASCACK BROOK-STATELINE BROOK

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for Montvale is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones, and the base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year flood). This map is developed in accordance with the latest flood insurance map preparation guidelines published by the Federal Insurance Administration.

6.0 OTHER STUDIES

In 1977, the U.S. Army Corps of Engineers prepared a draft of a flood control study of Pascack Brook and some tributaries (Reference 4). As previously mentioned, the U.S. Army Corps of Engineers HEC-2 computer model (Reference 10) was used, with some adjustments, for the hydraulic modeling for Pascack Brook and Muddy Creek in this Flood Insurance Study. A hydrologic analysis of the gaged information on Pascack Brook provided discharges significantly different from those used in the U.S. Army Corps of Engineers Study. As these revised flows were used in this Flood Insurance Study, it was necessary to recompute the water-surface profiles. The water-surface profiles determined for Pascack Brook in this study are authoritative and supersede previous determinations. For Muddy Creek, the 100-year discharge determined for this study is very close to that used in the U.S. Army Corps of Engineers study, and the 100-year profile, as determined in this study, agrees with the water-surface profile in the U.S. Army Corps of Engineers study along the entire reach within 0.5 foot. The water-surface profiles thus determined for Muddy Creek are authoritative and are compatible with previous determinations.

The water-surface elevations and flood boundary and floodway delineations, as developed in this Flood Insurance Study along Pascack Brook, Bear Brook, Mill Brook, and Echo Glen Brook, are in agreement with those determined for the Flood Insurance Study for the downstream Borough of Park Ridge (Reference 12).

Along Cherry Brook, the water-surface elevations and flood boundary and floodway delineations determined for this study are consistent and in agreement with the Flood Insurance Study of the downstream Township of River Vale (Reference 13).

The Flood Insurance Studies of the adjacent communities of Park Ridge and River Vale were conducted concurrently with this study (References 12 and 13, respectively).

No flood-related studies were found for Fieldstone, Laurel, and Stateline Brooks.

Flood boundary delineations for this study supersede the Federal Insurance Administration Flood Hazard Boundary Map (Reference 14).

This study is authoritative for the purposes of the National Flood Insurance Program; data presented herein either supersede or are compatible with all previous determinations.

7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic, and other pertinent data used in this study can be obtained by contacting the Insurance and Mitigation Division, Federal Emergency Management Agency, 26 Federal Plaza, Room 19-100, New York, New York 10278.

8.0 BIBLIOGRAPHY AND REFERENCES

1. U.S. Department of Commerce, Bureau of the Census, GE-20, No. 32, Area of New Jersey: 1960, January 1967

2. Bergen County Planning Board, Report 25, Population of Bergen County in the Nineteen Seventies, July 1974

3. U.S. Department of the Army, Corps of Engineers, New York District, Draft of Interim Report for Water Resources Development, Hackensack River Basin, New York and New Jersey, June 1969

4. U.S. Department of the Army, Corps of Engineers, New York District, Draft of Pascack Brook Flood Control Study, 1977

5. U.S. Water Resources Council, "Guidelines for Determining Flood Flow Frequency," Bulletin 17, March 1976

6. U.S. Department of the Interior, Geological Survey, Water-Supply Paper 1672, Magnitude and Frequency of Floods in the United States, Water Years Prior to 1961, Part 1-B, North Atlantic Slope Basins, New York to York River, 1968

7. U.S. Department of the Interior, Geological Survey, Water-Supply Paper 1902, Surface-Water Supply of the United States, 1961-65, Part 1, North Atlantic Slope Basins, Volume 2, Basins from New York to Delaware, 1970

8. U.S. Department of the Interior, Geological Survey, Water Resources Data for New Jersey, Part 1, Surface-Water Records, Trenton, New Jersey, 1966 through 1975

9. U.S. Department of the Interior, Geological Survey, Special Report 38, prepared in Cooperation With the New Jersey Department of Environmental Protection, Magnitude and Frequency of Floods in New Jersey With Effects of Urbanization, Stephen J. Stankowski, 1974

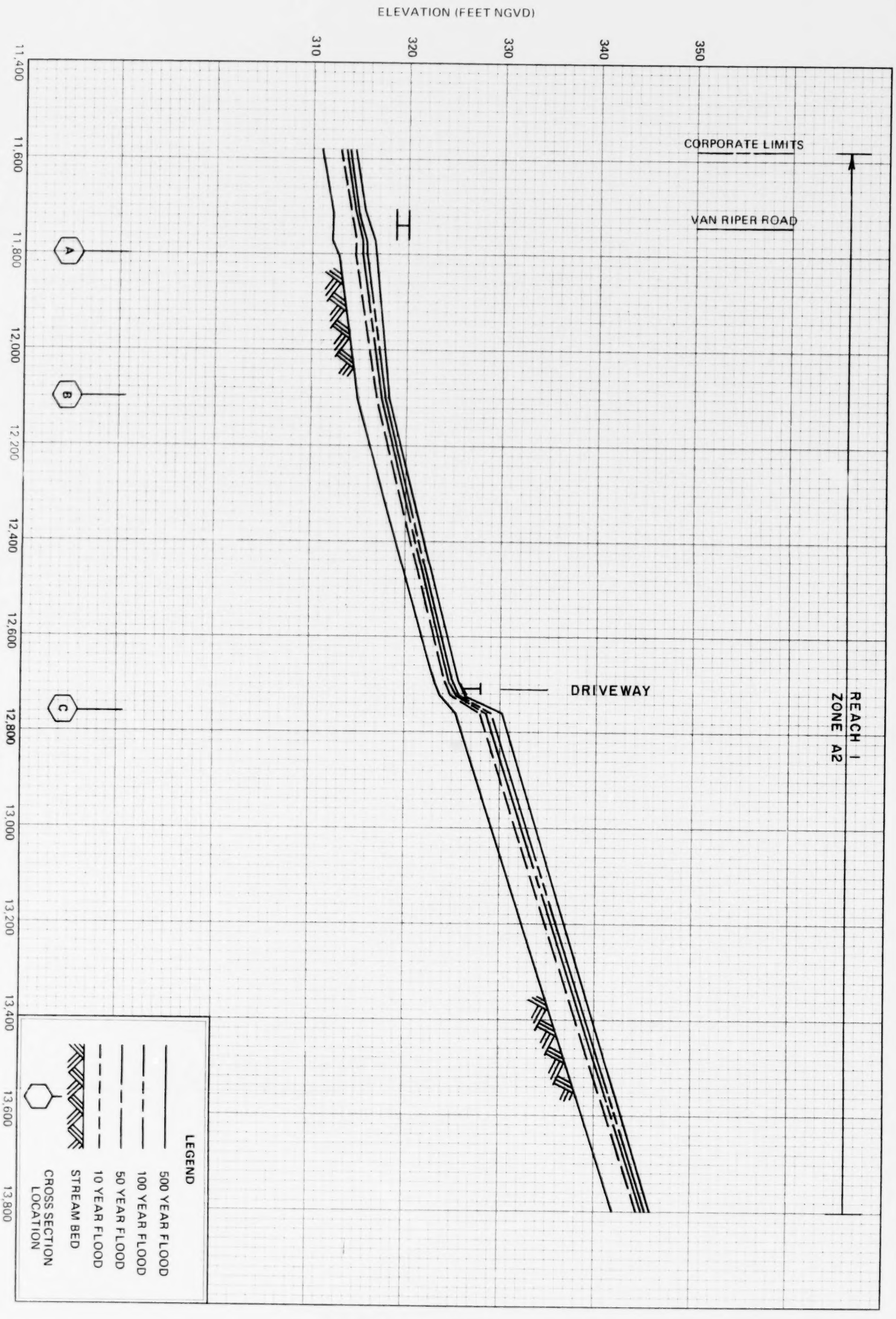
10. U.S. Department of the Army, Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water-Surface Profiles, Generalized Computer Program, Davis, California, October 1973

11. Aerial Data Reduction Associates, Inc., Topographic Maps, Borough of Montvale, New Jersey in the Vicinity of Bear Brook, Cherry Brook, Echo Glen Brook, Fieldstone Brook, Laurel Brook, Mill Brook, Muddy Creek, Pascack Brook, and Stateline Brook, Scale 1:2400, Contour Interval 5 feet (1977)

12. Federal Emergency Management Agency, Federal Insurance Administration Flood Insurance Study, Borough of Park Ridge, New Jersey, May 1981

13. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Township of River Vale, New Jersey, unpublished

14. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Borough of Montvale, New Jersey, Scale 1:6000, 1976



01P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD PROFILES

BEAR BROOK

REACH 1
ZONE A2

ELEVATION (FEET NGVD)

390
380
370
360
350
340

13,800 14,000 14,200 14,400 14,600 14,800 15,000 15,200 15,400

STREAM DISTANCE IN FEET ABOVE MOUTH

D

E

LEGEND

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- STREAM BED
- CROSS SECTION LOCATION

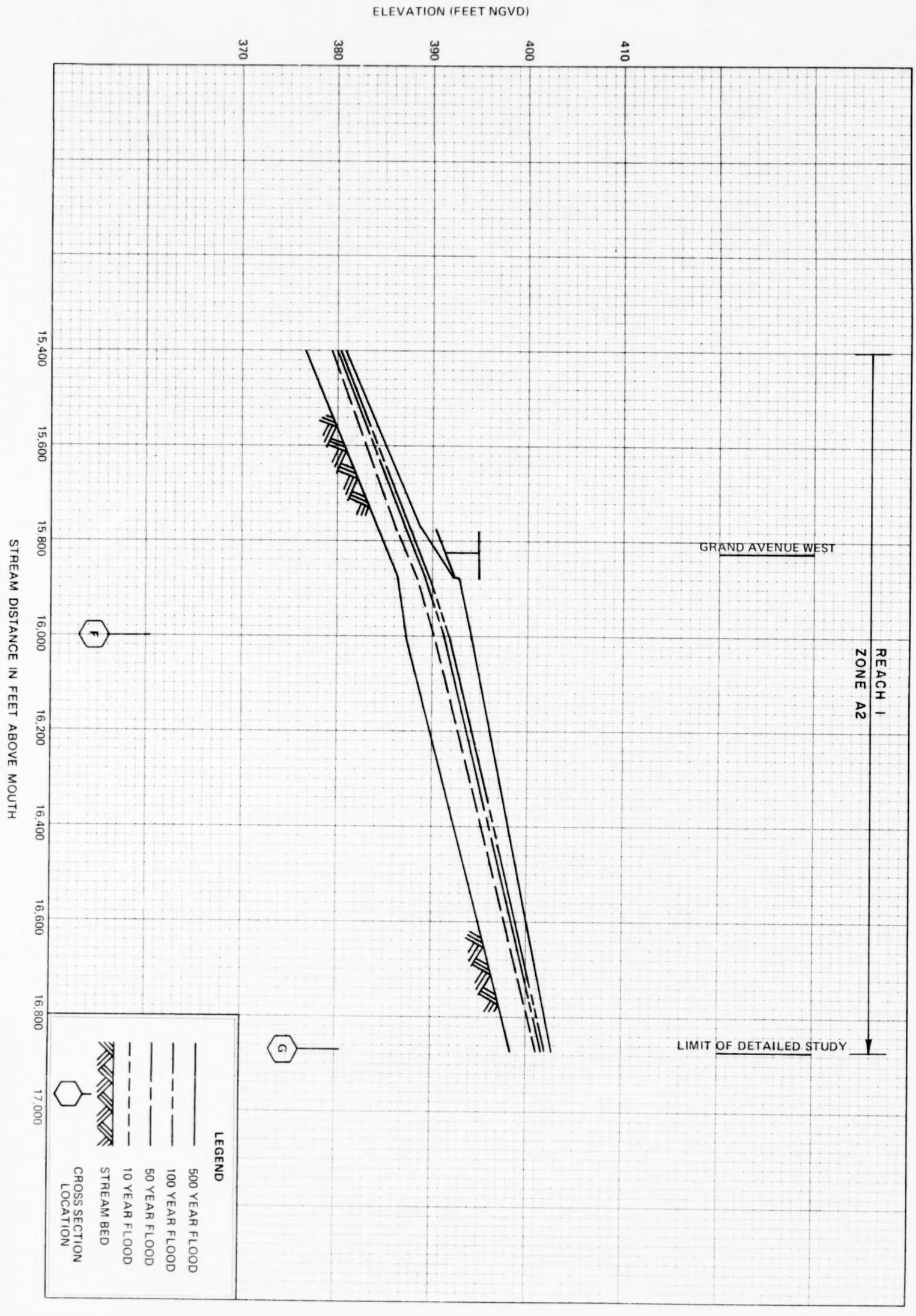
FLOOD PROFILES

BEAR BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

02P



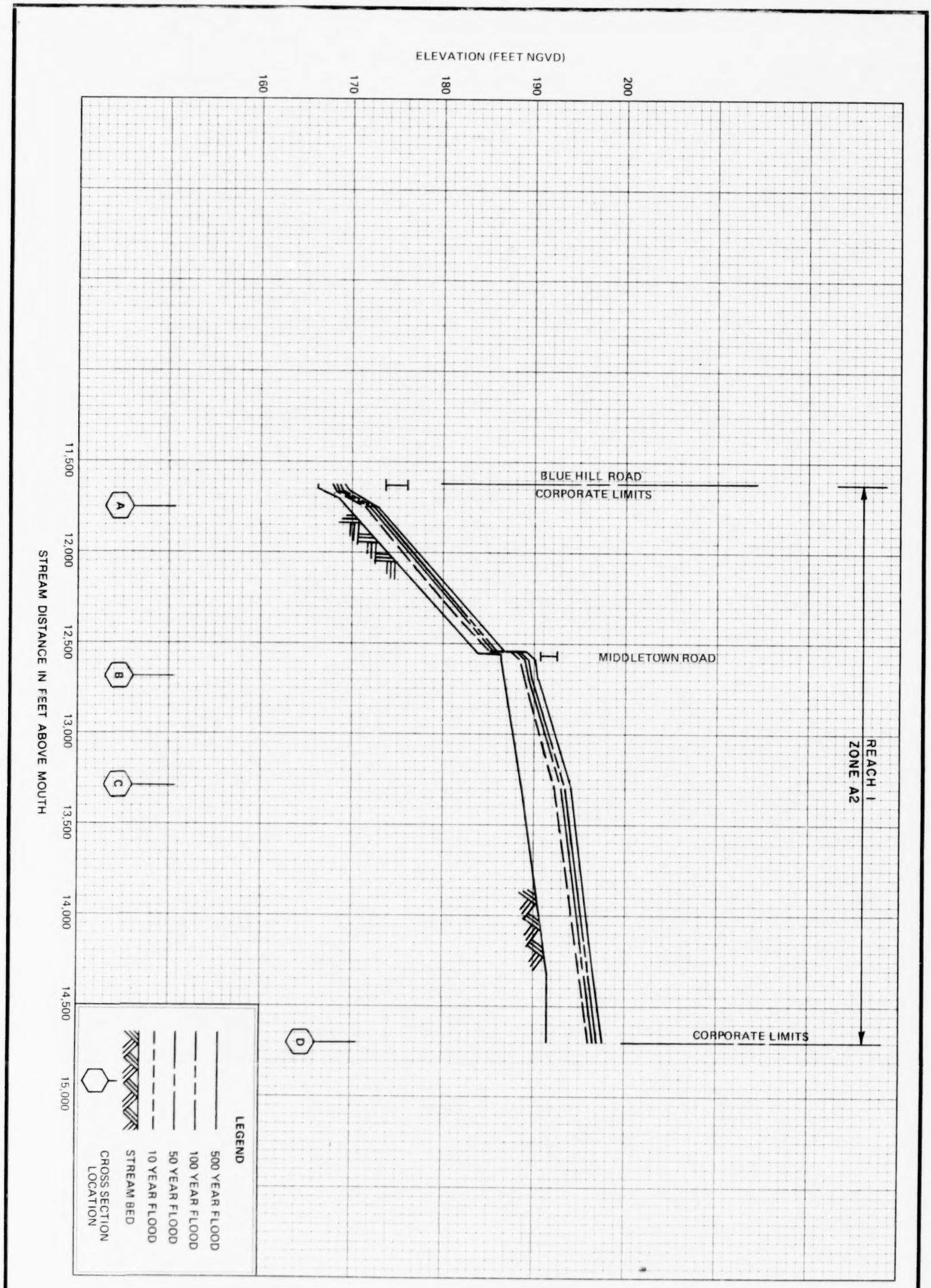
03P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD PROFILES

BEAR BROOK



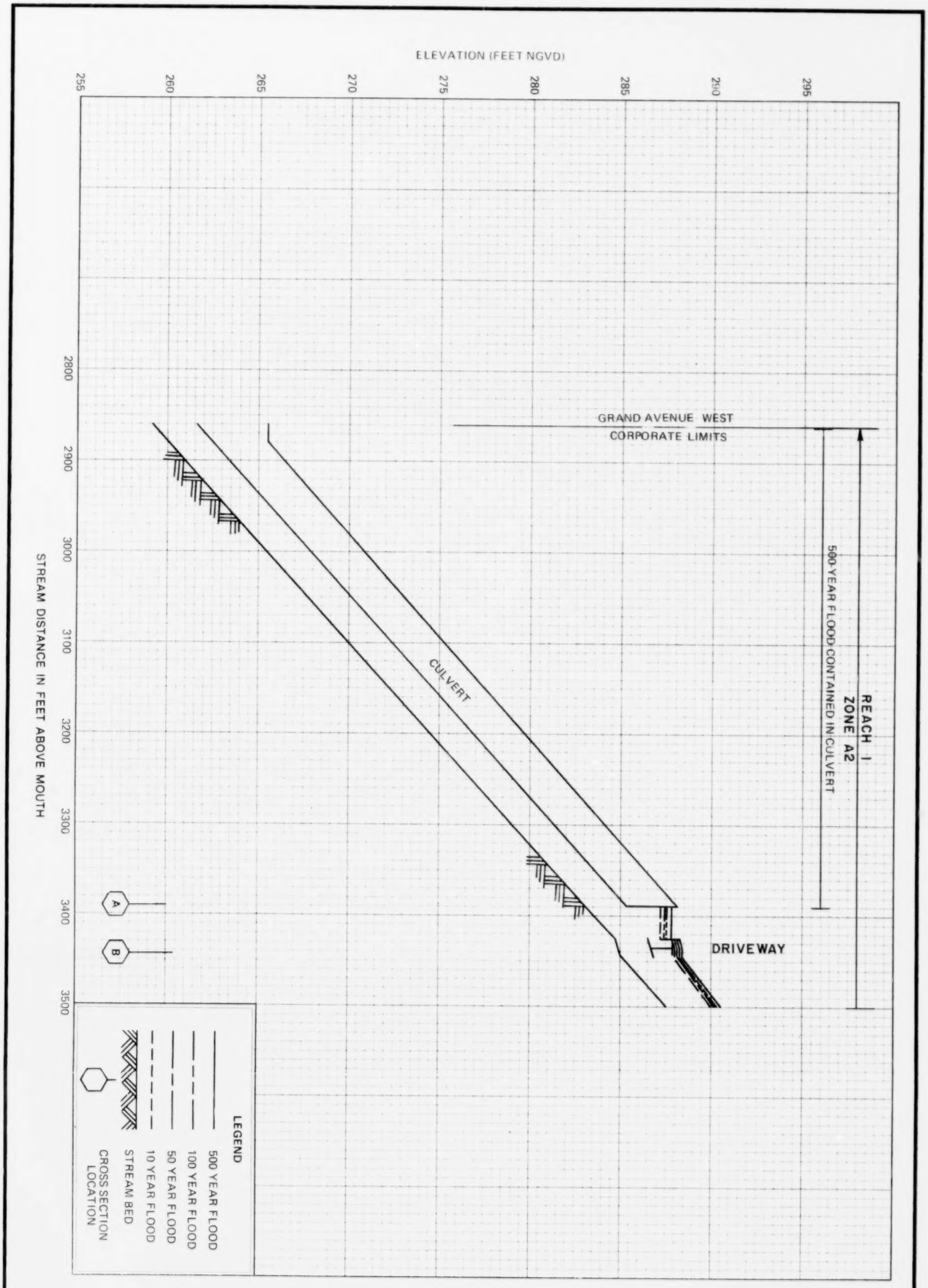
04P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD PROFILES

CHERRY BROOK



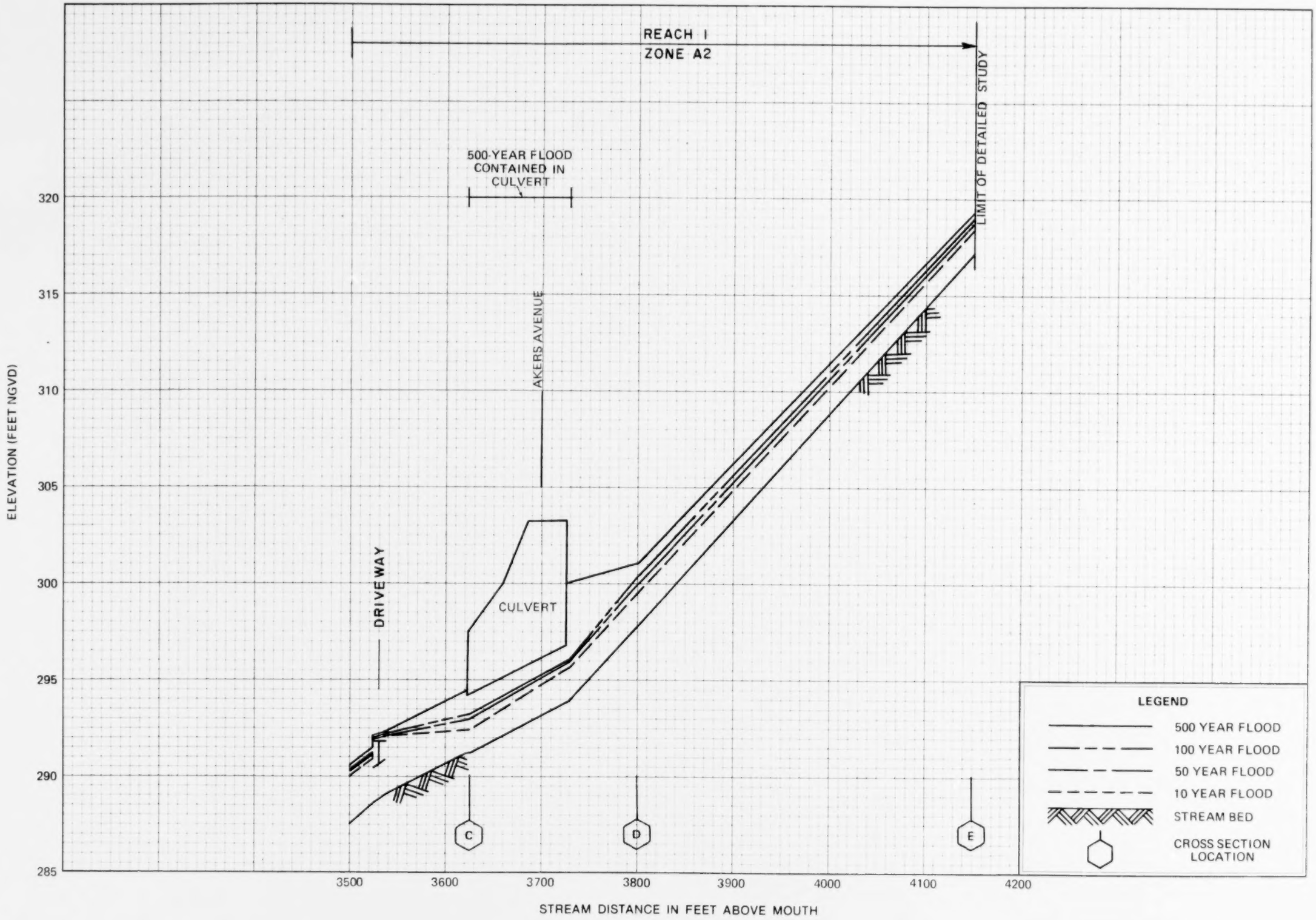
05P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD PROFILES

ECHO GLEN BROOK



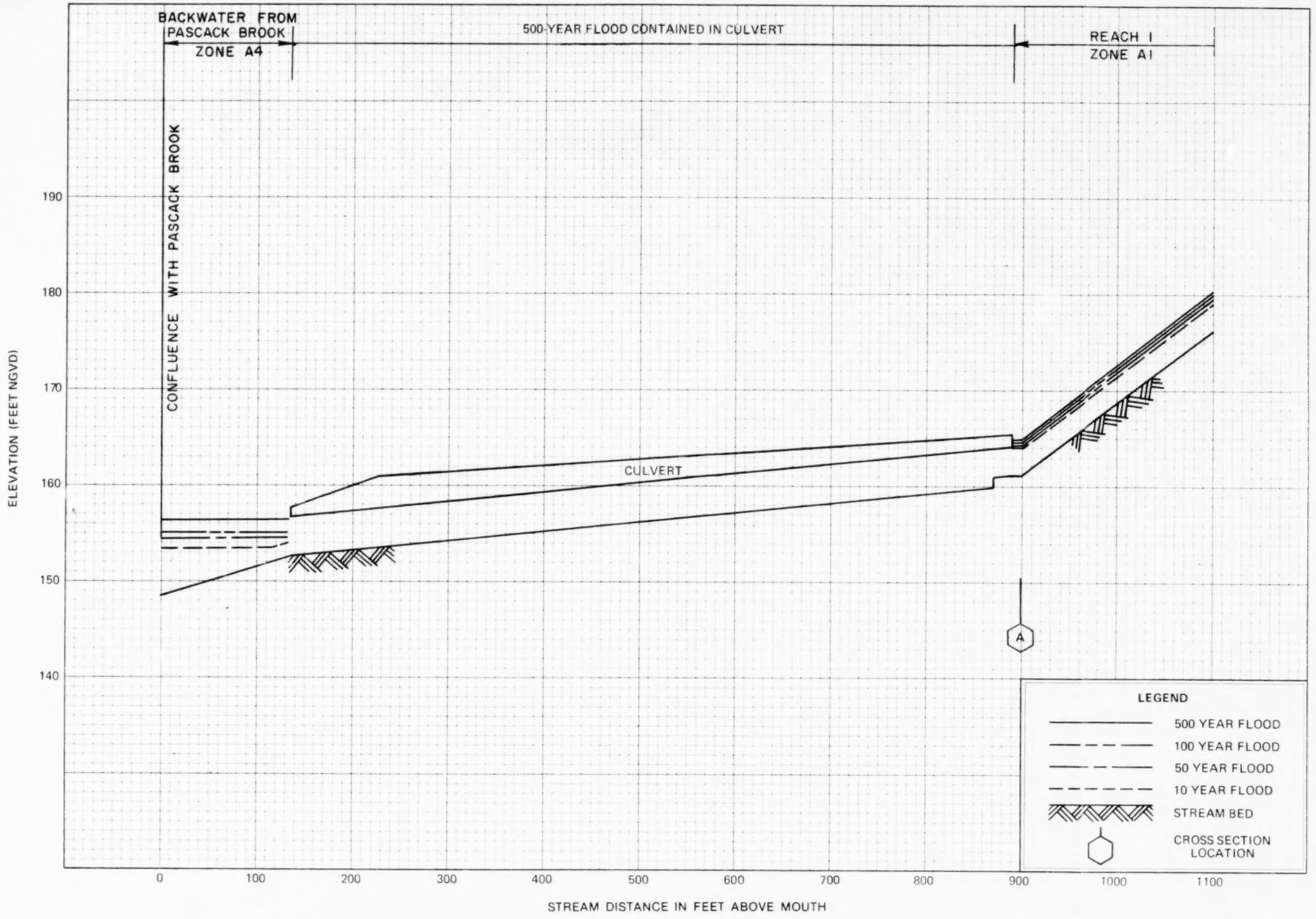
FLOOD PROFILES

ECHO GLEN BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

06P



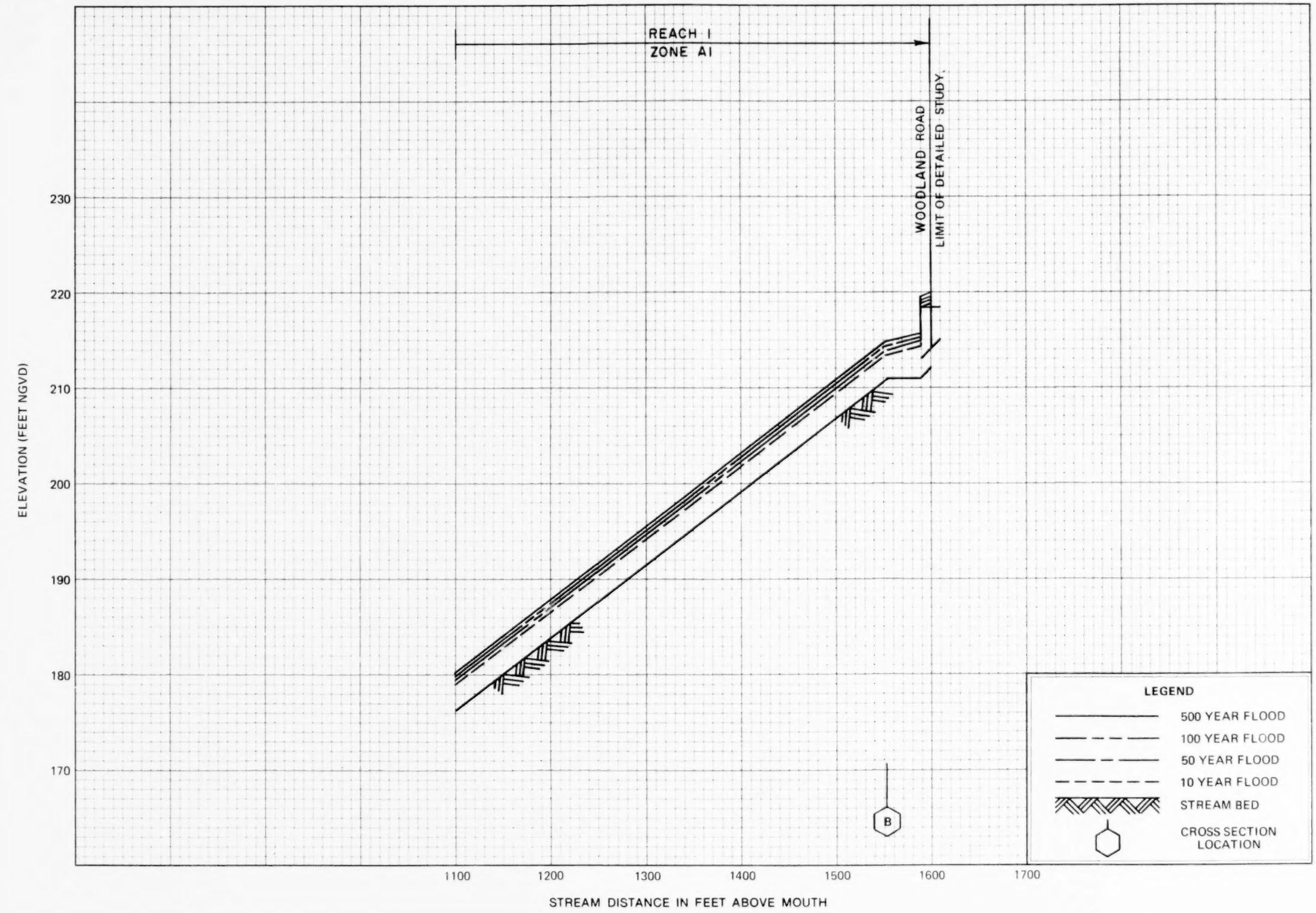
FLOOD PROFILES

FIELDSTONE BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

07P



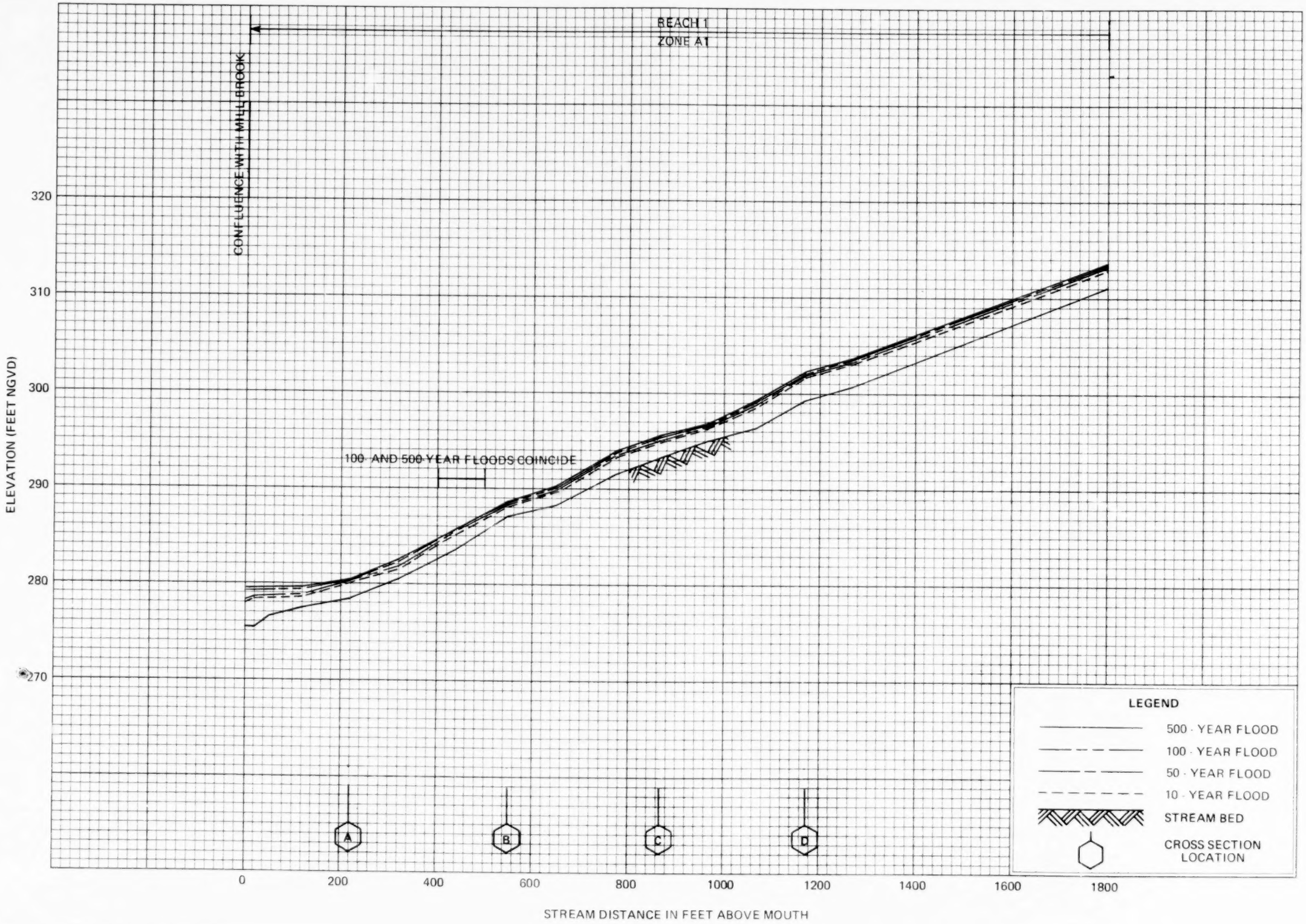
FLOOD PROFILES

FIELDSTONE BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

08P



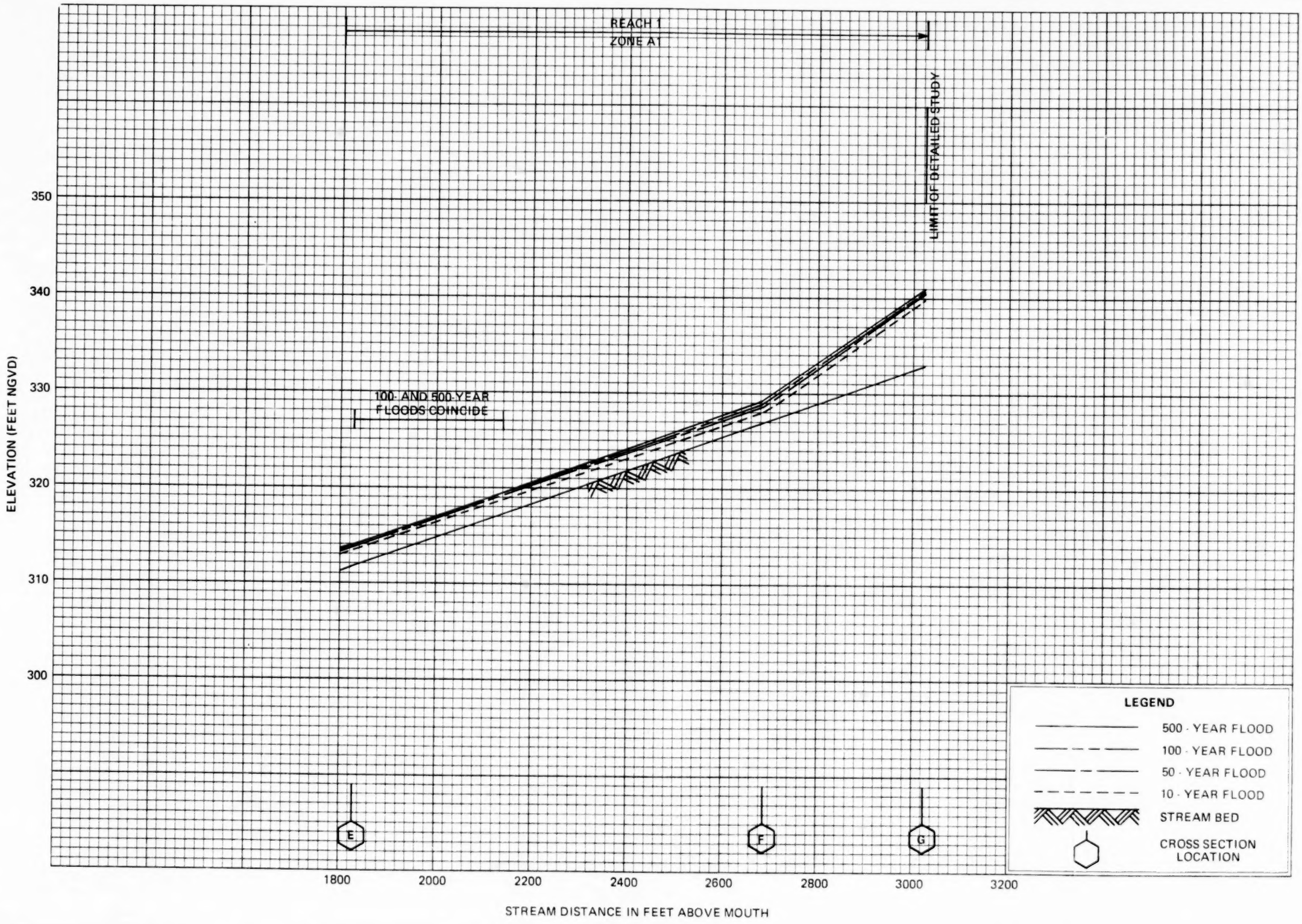
FLOOD PROFILES

LAUREL BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO)

09P



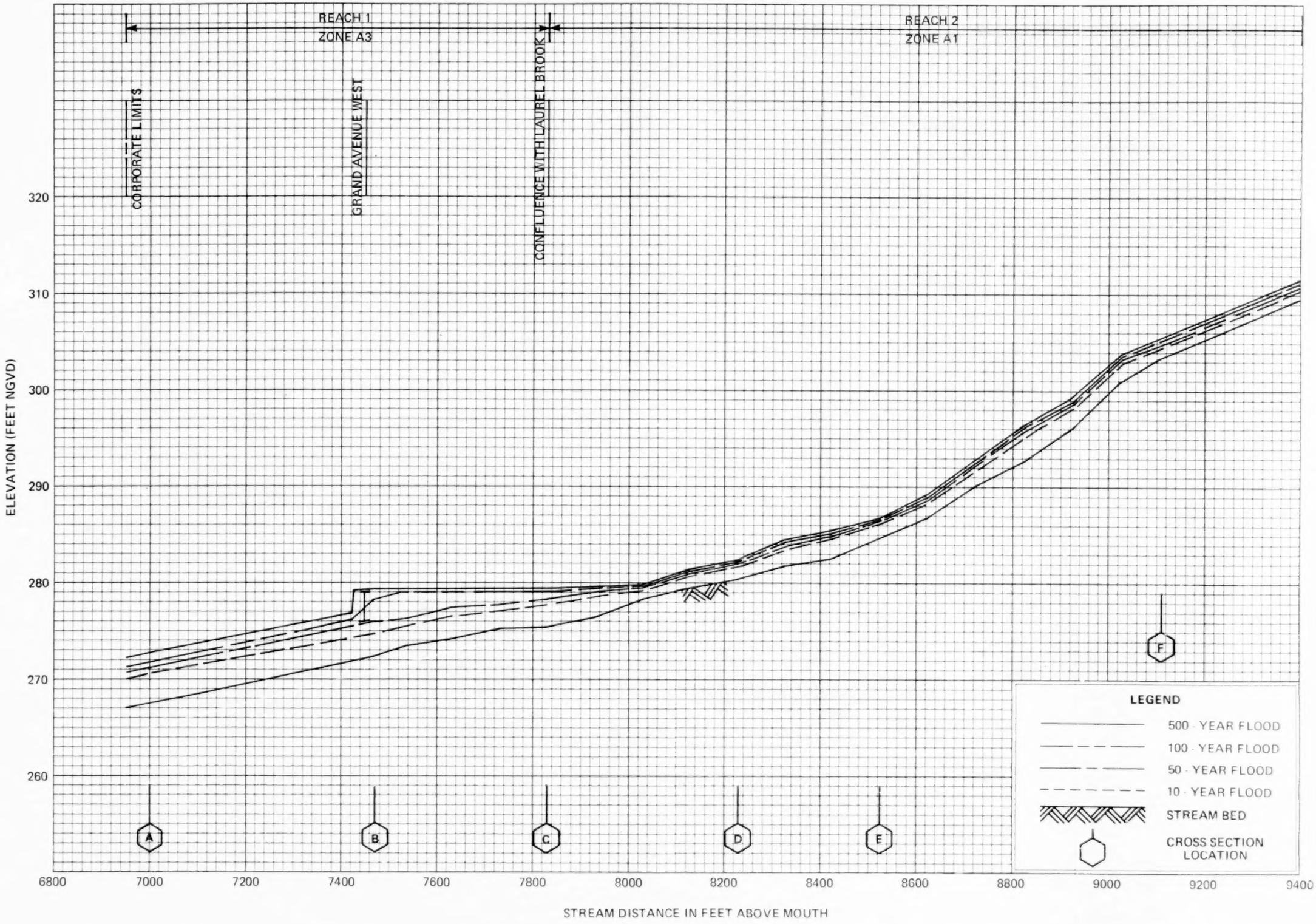
FLOOD PROFILES

LAUREL BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO)

10P



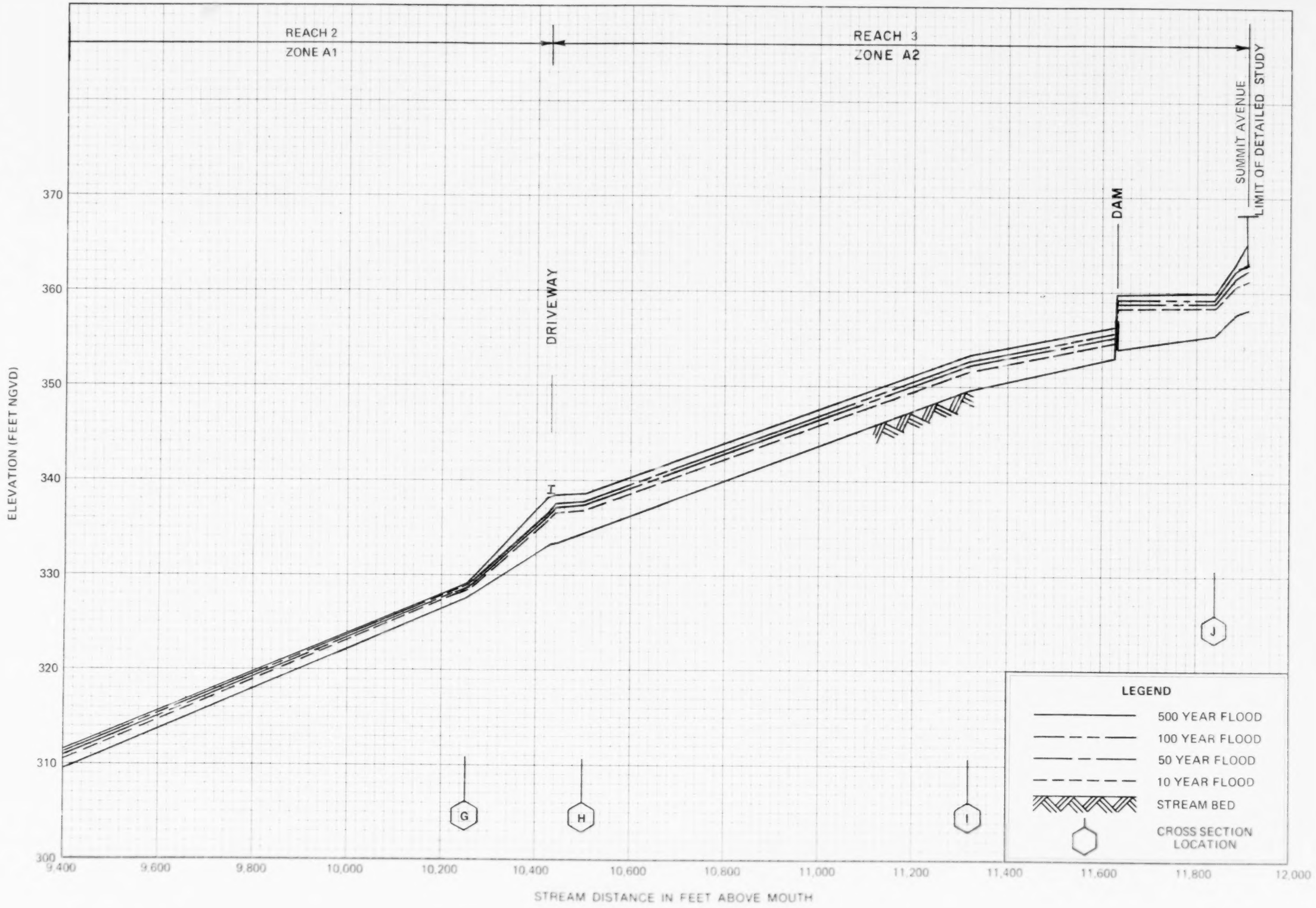
FLOOD PROFILES

MILL BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO)

11P



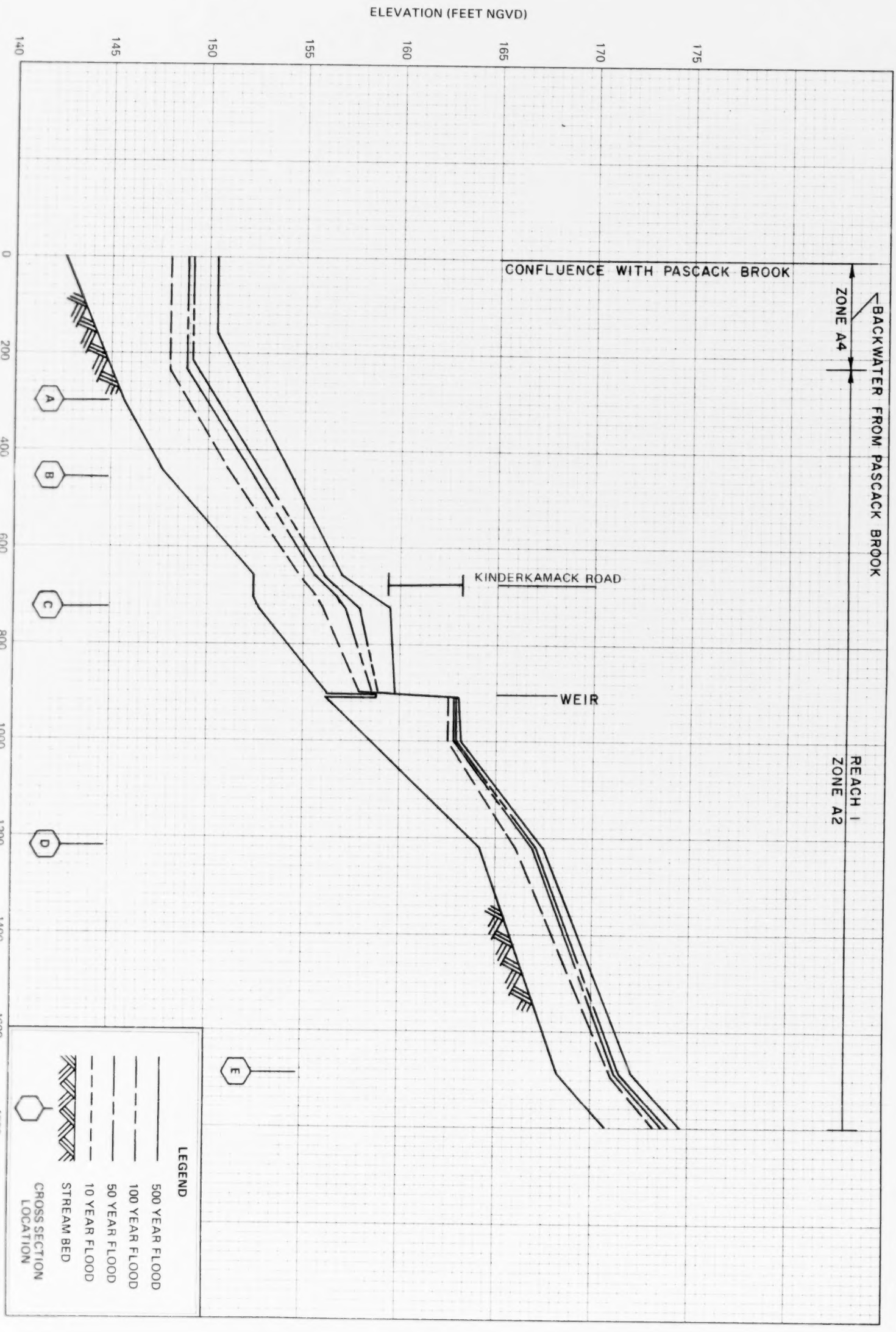
FLOOD PROFILES

MILL BROOK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

12P

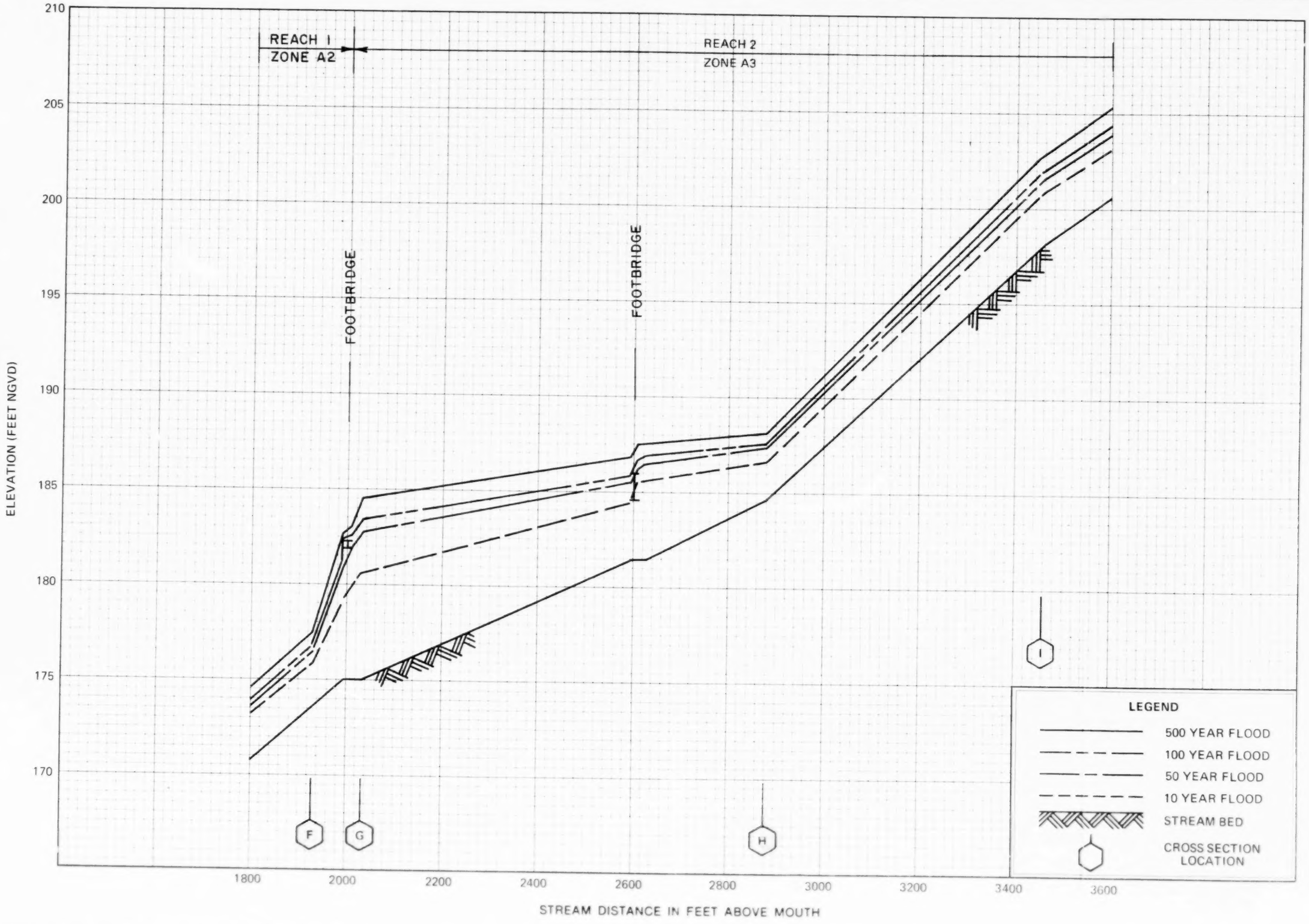


FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD PROFILES

MUDDY CREEK



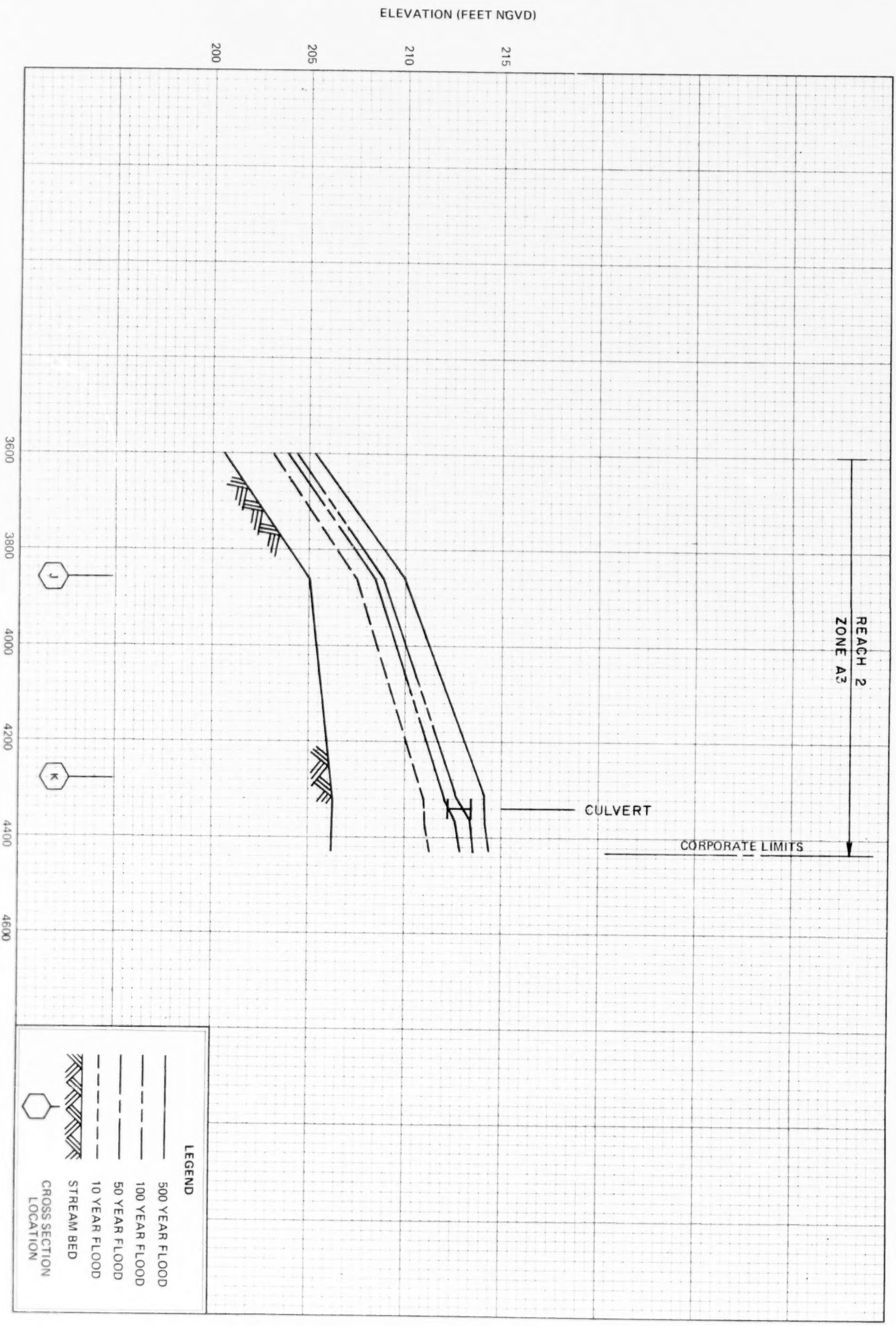
FLOOD PROFILES

MUDDY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

14P



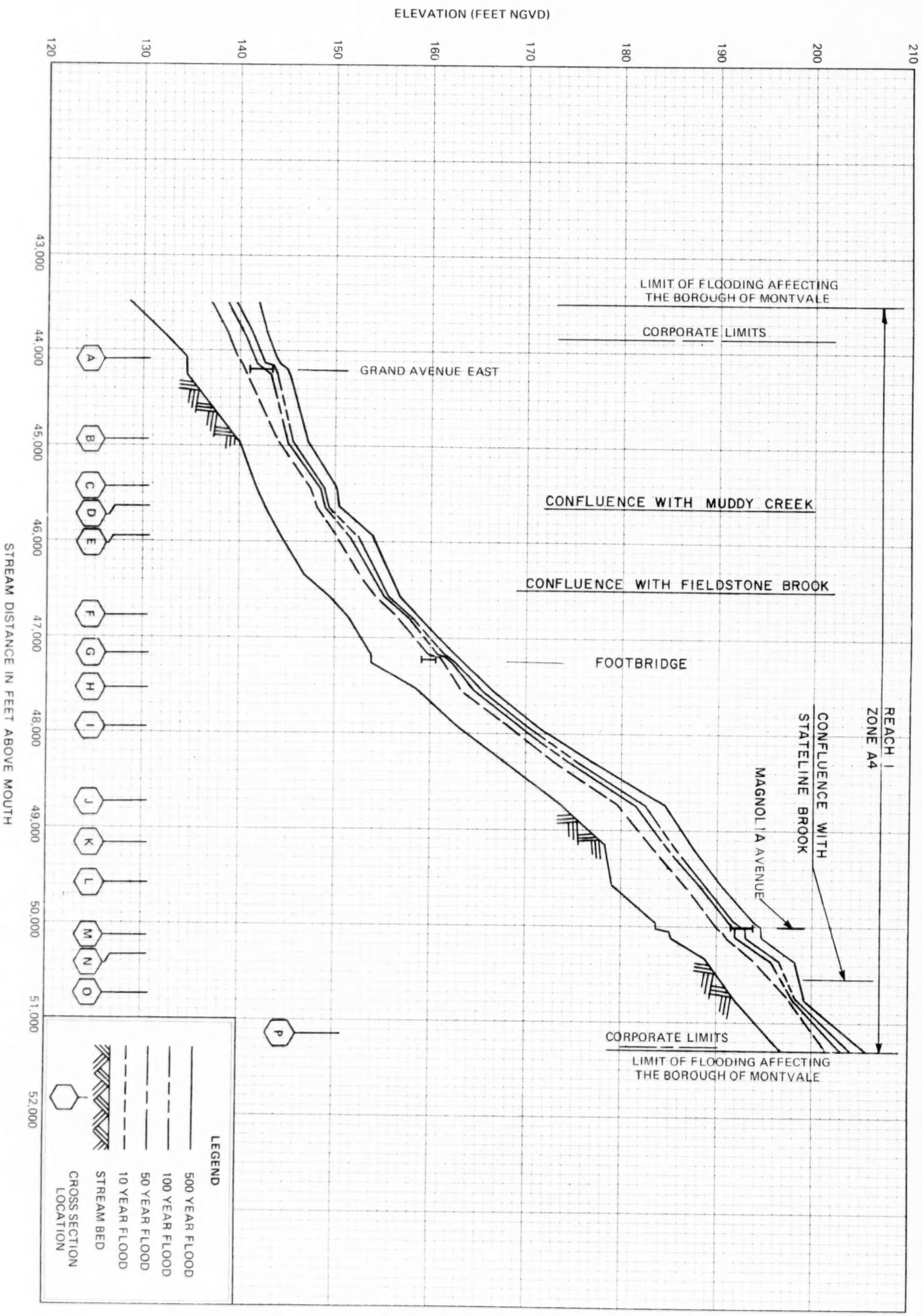
15P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD PROFILES

MUDDY CREEK



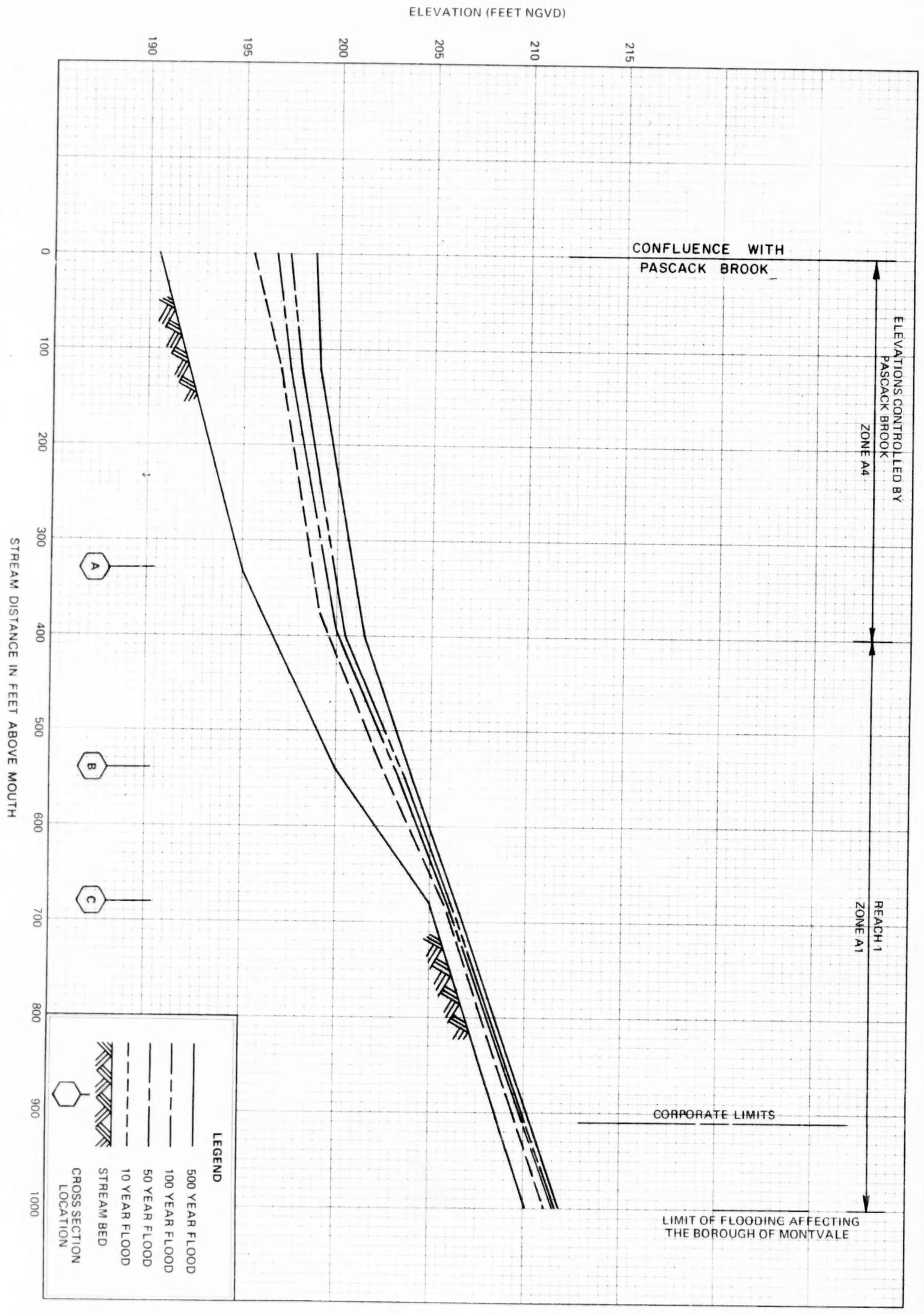
16P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD PROFILES

PASCACK BROOK



17P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

BOROUGH OF MONTVALE, NJ
(BERGEN CO.)

FLOOD PROFILES

STATELINE BROOK